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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Jin-Tae Oh

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EXAMINER

POWERS, WILLIAM S

ART UNIT

PAPER NUMBER

2434

MAIL DATE

DELIVERY MODE

09/04/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/749,262	Applicant(s) OH ET AL.	
	Examiner WILLIAM S. POWERS	Art Unit 2434	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 6/6/08 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 6/9/2009 are directed to the amendments to the claims and are addressed in the Response to Amendment section below.

Response to Amendment

2. The Examiner has stated the below column and line numbers as examples. All columns and line numbers in the reference and the figures are relevant material and Applicant should take the entire reference into consideration upon the reply to this Office Action.
3. Claims 1 and 3 have been amended.
4. Claims 2 and 4-11 have been cancelled.
5. Claims 1 and 3 are pending.

Drawings

6. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "assigning the characteristic packet ID of a divided part located prior to the corresponding divided part

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to a third field” must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. Figure 4 shows a third field, but it does not contain “the characteristic packet ID of a divided part located prior to the corresponding divided part”. The contents of the third field are mid1-mid7 and seem to refer to each respective table and not to the prior part.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

7. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The title of the invention is "High-speed pattern storing and matching method", but the step of pattern matching has been deleted from the method claim.

Claim Objections

8. In light of Applicant's amendment, the previous objection to claims 1 and 7 has been withdrawn.

9. Claim 3 is objected to because of the following informalities: the limitation "the two words" lacks antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 101

10. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

11. Claims 1 and 3 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The method of claim 1 as currently presented is not tied to a machine nor does it transform the pattern data to a different state or thing. The method of claim 1 merely stores data in a table. Nothing is done to the data nor is the data used for anything. The method describes the abstract

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manipulation of data and does not fall into any of the statutory categories of useful process, machine, manufacture or composition of matter.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 7,110,540 to Rajagopal et al. (hereinafter Rajagopal) in view of US Patent No. 5,359,724 to Earle.

As to claim 1, Rajagopal teaches:

- a. Dividing a whole sentence of the pattern data into a plurality of divided parts having a defined length or less (portioning the byte pattern (sentence) into substrings (divided parts) equal to the shortest byte pattern (defined length)) (Rajagopal, col. 2, lines 9-20).
- b. Generating a table for each divided part (a hash table is generated for the byte patterns) (Rajagopal, col. 2, lines 9-42). Although the claim language specifies a separate table for each divided part, the Examiner sees no patentable difference between separate tables for each divided part and one table with records for each divided part as each divided part has a representation in each design choice.
- c. Assigning position sequence information of a corresponding divided part in the whole sentence to a first field (position of the substrings in relation to the byte pattern is recorded in the mismatch value) (Rajagopal, col. 2, lines 32-38).

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- d. Assigning a characteristic packet ID of the corresponding divided part to a second field (keys are assigned to each substring which include checksums and position data) (Rajagopal, col. 2, lines 39-42 and fig. 2).

Rajagopal teaches, but does not expressly mention that the position information of the divided part is the position of subsequent divided part. However, in an analogous art, Earle teaches:

- b. Assigning the characteristic packet ID of a divided part located prior to the corresponding divided part to a third field when the corresponding divided part is not an initial divided part among the plurality of divided parts (data is stored in a linked list implementation where the subsequent piece of data is pointed to by the preceding piece of data) (Earle, col. 7, line 49-col. 8, line 16 and figs. 6 and 7).

Therefore, one of ordinary skill in the art at the time the invention was made would have been motivated to implement the pattern storing scheme of Rajagopal with the linked list implementation of data storage in order to increase the speed of accessing data and to minimize the storage needed as suggested by Earle (Earle, col. 1, lines 5-14).

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 7,110,540 to Rajagopal et al. (hereinafter Rajagopal) in view of US Patent No. 5,359,724 to Earle as applied to claim 1 above, and further in view of US Patent No. 5,594,638 to Iliff.

As to claim 3 as best understood, Rajagopal as modified does not expressly mention the use of meta characters. However, in an analogous art, Iliff teaches the pattern data includes space information which represents that other words or characters are interposed between two words using meta characters (the meta function will compare queries to the database using wildcard characters in order to ignore terms that are not of interest) (Iliff, col. 43, line 33-col. 44, line 50).

Therefore, one of ordinary skill in the art at the time the invention was made would have been motivated to implement the pattern storing scheme of Rajagopal as modified with the meta function of Iliff in order to examiner only the fields of interest in a record query as suggested by Iliff (Iliff, col. 43, lines 33-42).

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM S. POWERS whose telephone number is (571)272-8573. The examiner can normally be reached on m-f 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kambiz Zand can be reached on 571 272 3811. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/W. S. P./
Examiner, Art Unit 2434

William S. Powers
Examiner
Art Unit 2434

9/2/2009

/Kambiz Zand/

Supervisory Patent Examiner, Art Unit 2434